Amendments to the Claims

Listing of Claims:

1-27 Cancelled

28. (Currently Amended) An ostegoenic implant comprising an implant made of titanium metal, having a surface covered with a polypeptide at a rate of 5 to 70% ~~, preferably 8% to 20%,~~ based on a maximum coverage of the metal surface with a monomolecular layer, wherein the polypeptide is selected from the group consisting of one or more of transforming growth factors (TGF) and systemic hormones.

29. (Previously Presented) The implant of claim 28, having an at least partially roughened surface, which surface is at least partially covered, in the hydroxylated state, with a polypeptide selected from the group consisting of one or more of transforming growth factors (TGF) and systemic hormones.

30. (Currently Amended) The implant of claim 29, having a macro-roughness, and a micro-roughness superposed on the macro-roughness, said micro-roughness being produced by chemical etching of the surface and/or by means of electrolytic treatment ~~, preferably by etching with an inorganic acid or a mixture of inorganic acids, preferably with hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid or a mixture of such acids, or else by treating the surface with hydrochloric acid, hydrogen peroxide and water in a ratio of about 1:1:5 by weight~~.

31. (Previously Presented) The implant of claim 28, wherein the transforming growth factor (TGF) is selected from the group consisting of one or more of (i) transforming growth factors beta (TGF-ß) and (ii) bone morphogenic proteins (BMP).

32. (Previously Presented) The implant of claim 31, wherein the transforming growth factor beta (TGF- ß) is selected from the group consisting of one or more of TGF-ß1, TGF-ß2, TGF- ß3, TGF- ß4, TGF- ß5.

33. (Previously Presented) The implant of claim 31, wherein the TGF is a bone morphogenic protein (BMP) selected from the group consisting of one or more of BMP-2 (BMP-2a), BMP-3, BMP-4 (BMP-2b), BMP-5, BMP-6, BMP-7 (OP-1), BMP-8 (OP-2), BMP-9, BMP-10, BMP-11, BMP-12, and BMP-13.

34. (Previously Presented) The implant of claim 31, wherein the TGF is a bone morphogenic protein (BMP) selected from the group consisting of one or more of osteonectin, bone sialoprotein (BSP), osteopontin, osteocalcin, osteostatin, osteogenin, and osteo growth peptides (OGP).

35. (Previously Presented) The implant of 34, wherein the osteocalcin has a formula): H-Gly-Ala-Pro-Val-Pro-Tyr-Pro-Asp-Pro-Leu-Glu-Pro-Arg-OH.

36. (Previously Presented) The implant of claim 34, wherein the osteocalcin has a formula: H-Gly-Phe-Gln-Glu-Ala-Tyr-Arg-Arg-Phe-Tyr-Gly-Pro-Val-OH.

37. (Previously Presented) The implant of claim 34, wherein the osteocalcin has a formula: H-Tyr-Gln-Glu-Ala-Phe-Arg-Arg-Phe-Gly-Pro-Val-OH.

38. (Previously Presented) The implant of claim 34, wherein the osteocalcin has a formula: H-Tyr-Leu-Tyr-Gln-Trp-Leu-Gly-Ala-Pro-Val-Pro-Tyr-Pro-Asp-Pro-Leu-Gla-Pro-Arg-Arg-Gla-Val-Cys-Gla-Leu-Asn-Pro-Asp-Cys-Asp-Glu-Leu-Ala-Asp-His-Ile-Gly-Phe-Gln-Gln-Ala-Tyr-Arg-Arg-Phe-Tyr-Gly-Pro-Val-OH.

39. (Previously Presented) The implant of claim 34, wherein the osteogenic growth peptide (OGP) has a formula: H-Ala-Leu-Lys-Arg-Gln-Gly-Arg-Thr-Leu-Tyr-Gly-Phe-Gly-Gly-OH.

40. (Currently Amended) The implant of claim 28, wherein the polypeptide contains at least one residue of an amino acid with a heterocyclic ring~~, preferably the residue of proline (Pro), hydroxyproline (Hypro), tryptophan (Try) or histidine (His)~~.

41. (Previously Presented) The implant of claim 28, wherein the systemic hormone comprises one or more of 1,25-$(OH)_2D_3$, 1α,1,25$(OH)_2D_3$ and 24,25-$(OH)_2D_3$.

42. (Currently Amended) The implant of claim 28, wherein the implant, or at least its covered surface, is enclosed in a gas-tight and liquid-tight envelope which is filled with a gas which is inert for the implant surface~~, preferably with nitrogen, oxygen or a noble gas~~ and/or at least partially with pure water~~, which optionally contains additives~~.

43. (Currently Amended) The implant of claim 42, wherein the pure water in the envelope contains a polypeptide comprising one or more of a transforming growth factor (TGF) and a systemic hormone~~, preferably the same polypeptide with which the implant surface is covered~~.

44. (Currently Amended) The implant of claim 43, wherein the pure water contains the polypeptide in a concentration in the range from 0.01 µmol/l to 100 µmol/l ~~, preferably 0.1 µmol/l to 10 µmol/l, and preferably in a concentration of about 1 µmol/l~~.

45. (Currently Amended) The implant of claim 44, wherein the pure water contains inorganic salts in the form of monovalent alkali metal cations~~, preferably Na+ or K+, or a mixture of Na+ and K+,~~ with anions and/or divalent cations in the form of water-soluble inorganic salts, ~~preferably Mg^{+2}, Ca^{+2}, Sr^{+2} and/or Mn^{+2} in the form of the chlorides, chlorates, nitrates, phosphates and/or phosphonates~~.

46. (Currently Amended) The implant of claim 42, wherein the pure water contains inorganic salts in a total amount of said cations and anions in each case in a range from

50 mEq/l to 250 mEq/l~~, preferably 100 mEq/1 to 200 mEq/l, and preferably in an amount of about 150 mEq/1~~.

47. (Currently Amended) A process for producing an implant of claim 28, wherein the implant surface is mechanically roughened by being shotpeened or sandblasted and/or roughened by use of plasma technology, wherein subsequently

(i) the surface which has been roughened mechanically or by plasma technology is treated with an electrolytic or chemical etching process until a hydroxylated surface has been produced~~, preferably with an inorganic acid or a mixture of inorganic acids, preferably with hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid, or a mixture of such acids, or hydrogen chloride, hydrogen perioxide and water in a ratio of about 1:1:5 by weight~~; and

(ii) the surface is at least partially covered with a polypeptide comprising one or more of an osteogenic growth peptide (OGP), a transforming growth factor (TGF) and an osteocalcin.

48. (Previously Presented) The process of claim 47, wherein the polypeptide is brought into contact with the hydroxylated metal surface in aqueous solution at a concentration of at least 10 µmol/l (micromole per liter).

49. (Previously Presented) The implant produced by the process of claim 47.

50. (Previously Presented) The implant of claim 28, wherein it is a dental implant.

51. (Currently Amended) A process for introducing an osteogenic dental implant of at least partially cylindrical shape into a cavity of a jaw bone, wherein the bone surface, in the area of the cavity, is brought at least partially into contact with a polypeptide selected from the group consisting of one or more of transforming growth factors (TGF) and systemic hormones, wherein the metal surface is covered with the polypeptide at a rate of 5 to 70%~~, preferably 8% to 20%~~, based on a maximum coverage of the metal surface with a monomolecular layer.

52. (New) The implant of claim 28, having a surface covered with a polypeptide at a rate of 8% to 20%.

53. (New) The implant of implant 30, having a micro-roughness produced by etching with an inorganic acid or a mixture of inorganic acids.

54. (New) The implant of claim 30, having a micro-roughness produced by chemical etching with hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid or a mixture of such acids.

55. (New) The implant of claim 30, having a micro-roughness produced by treating the surface with hydrochloric acid, hydrogen peroxide and water in a ratio of about 1:1:5 by weight.

56. (New) The implant of claim 40, wherein the polypeptide contains at least one residue of proline (Pro), hydroxyproline (Hypro), tryptophan (Try) or histidine (His).

57. (New) The implant of claim 42, wherein the gas is nitrogen, oxygen or a noble gas.

58. (New) The implant of claim 42, wherein the implant or at least the covered surface is enclosed at least partially with pure water.

59. (New) The implant of claim 42, wherein the pure water contains additives.

60. (New) The implant of claim 43, wherein the pure water contains the same polypeptide with which the implant surface is covered.

61. (New) The implant of claim 44, wherein the pure water contains the polypeptide in a concentration in the range from 0.1 µmol/l to 10 µmol/l.

62. (New) The implant of claim 44, wherein the pure water contains the polypeptide in a concentration in the range of about 1 µmol/l.

63. (New) The implant of claim 45, wherein the pure water contains Na+ or K+, or a mixture of Na+ and K+, as the cations in monovalent alkali metal salts.

64. (New) The implant of claim 45, wherein the pure water contains Mg^{+2}, Ca^{+2}, Sr^{+2} and/or Mn^{+2} in the form of the chlorides, chlorates, nitrates, phosphates and/or phosphonates.

65. (New) The implant of claim 46, wherein the range is from 100 mEq/l to 200 mEq/l.

66. (New) The implant of claim 46, wherein the amount is about 150 mEq/l.

67. (New) The implant of claim 47, wherein the implant surface is treated with an inorganic acid or a mixture of inorganic acids.

68. (New) The implant of claim 47, wherein the implant surface is treated with hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid, or a mixture of such acids.

69. (New) The implant of claim 47, wherein the implant surface is treated with hydrogen chloride, hydrogen peroxide and water in a ratio of about 1:1:5 by weight.

70. (New) The process of claim 51, wherein the metal surface is covered with the polypeptide at a rate of 8% to 20%.